Air Quality Permitting
Technical Analysis

May 27, 2003

Tier II Operating Permit and Permit to Construct No. T2-020011

Amcor Precast
Nampa, Idaho

AIRS FACILITY NO.: 027-00085

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FINAL

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
ft	foot/feet
gr/dscf	grain per dry standard cubic feet
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMBtu	million British thermal units
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	permit to construct
PTE	potential to emit
PSD	Prevention of Significant Deterioration
PW	process weight
Rules	*Rules for the Control of Air Pollution in Idaho*
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per year
VOC	volatile organic compound
yd^3	cubic yards
yd^3/day	cubic yards

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of the *Rules for the Control of Air Pollution in Idaho* IDAPA 58.01.01, Sections 200 and 404, et seq., for issuing PTCs and Tier II operating permits.

2. PROJECT DESCRIPTION

This project is for the issuance of a Tier II operating permit and PTC for Amcor Precast located in Nampa. The emissions sources of the facility are listed in Table 1.1 below.

Table 1.1 FACILITY EMISSIONS SOURCES

Permit Sections	Source Description	Emissions Controls
3	Cleaver Brooks Model CB 700-150 6.28 MMBtu/hr natural gas-fired boiler	None
4	Cement and fly ash silos	Handy Trucking Co. baghouse

3. FACILITY DESCRIPTION

Amcor Precast manufactures concrete pipe and vaults. Aggregate (sand and gravel), cement, and fly ash are delivered to the facility by truck. Aggregate is dumped into a bin, conveyed to the top of the mixer building, and dropped into a storage silo. The conveyors are inside the building. Cement and fly ash are pneumatically transferred from trucks to storage silos. These silos vent to a baghouse. The aggregate, cement, and fly ash are dropped into a weigh hopper, then to a mixer. The concrete is mixed, then poured into pour buckets, which are emptied into molds. The molds are moved to the curing station, then outside for storage. A 6.28 MMBtu/hr natural gas-fired boiler provides heat for product curing and for space heat.

4. SUMMARY OF EVENTS

April 10, 2002	The DEQ received an application for a PTC from Amcor Precast.
August 8, 2002	The application was declared incomplete.
August 28, 2002	Additional information was received.
September 24, 2002	The application was declared complete.
February 3, 2003	A draft permit was made available to the facility for their review.
March 21, 2003	A proposed permit was issued.
April 8 – May 8, 2003	A public comment period was held on the proposed permit.

5. PERMIT/FACILITY HISTORY

As detailed in a letter from Spidell and Associates dated August 27, 2002, construction of the Amcor facility commenced in September 1984. Construction was completed in May 1985. The Cleaver Brooks boiler was installed in June 2000. The original 50 yd^3 concrete mixer was replaced with the current 53 yd^3 mixer in May 2002. This permit is the facility's initial air quality permit.

6. TECHNICAL ANALYSIS

Emissions Estimates

The Engineering Memorandum (refer to Appendix A of this memorandum) developed for this permit contains emissions estimates and the bases for the estimate calculations. All emissions estimates use emissions factors taken from the *Compilation of Air Pollutant Emission Factors, AP-42.*

Emissions estimates for toxic air pollutants emitted from natural gas combustion in the boiler can be found in the permit application submitted by the facility.

Modeling

The facility consultant, Spidell and Associates performed the modeling submitted in Amcor's application. Staff from DEQ reviewed this modeling and the memorandum of this review can be found in Appendix B of this memorandum. The results of the modeling analysis included in the application were approved by DEQ.

Area Classification

Amcor Precast is located in Canyon County, which is located in AQCR 64. This area is classified as attainment or unclassifiable for all federal and state criteria air pollutants.

Facility Classification

This facility is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. The facility is not a designated facility as defined in IDAPA 58.01.01.006.25. The facility is not yet subject to federal NSPS requirements, in accordance with 40 CFR 60, NESHAP requirements, in accordance with 40 CFR 61, or MACT requirements, in accordance with 40 CFR 63. The facility SIC code is 3272, and the AIRS facility classification is B.

7. PERMIT REQUIREMENTS

Regulatory Review

This permit is subject to the following permitting requirements:

IDAPA 58.01.01.201.....Permit to Construct Required
IDAPA 58.01.01.211.....Conditions for Permits to Construct
IDAPA 58.01.01.401.03..... Tier II Operating Permit
IDAPA 58.01.01.403..... Permit Requirements for Tier II Sources
IDAPA 58.01.01.404.01(c)..... Opportunity for Public Comment
IDAPA 58.01.01.404.04..... Authority to Revise or Renew Operating Permits
IDAPA 58.01.01.406..... Obligation to Comply
IDAPA 58.01.01.470..... Permit Application Fees for Tier II Permits
IDAPA 58.01.01.625..... Visible Emission Limitation
IDAPA 58.01.01.650..... General Rules for the Control of Fugitive Dust

IDAPA 58.01.01.701 ..... Particulate Matter- New Equipment Process Weight Limitations

Facility-wide Conditions

7.1 Fugitive Particulate Matter – Permit Condition 2.1

Requirement

Permit Condition 2.1 states that all reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651.

Compliance Demonstration

Permit Condition 2.3 requires that Amcor monitor and maintain records of the frequency and the methods of the actions used by the facility to reasonably control fugitive particulate emissions. Permit Condition 2.2 gives some examples of ways to reasonably control fugitive emissions which include using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets. All aggregate transfers and concrete manufacturing activities occur inside a building.

Permit Condition 2.4 requires Amcor to maintain a record of all fugitive dust complaints received. In addition, Amcor is required to take appropriate corrective action as expeditiously as practicable after a valid complaint is received. Amcor is also required to maintain records that include the date that each complaint was received and a description of the complaint, Amcor's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by Amcor reasonably control fugitive particulate matter emissions whether or not a complaint is received, Permit Condition 2.5 requires that Amcor conduct quarterly inspections of the facility. Amcor is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If Amcor determines that the fugitive emissions are not being reasonably controlled, Amcor shall take corrective action as expeditiously as practicable. Amcor is also required to maintain records of the results of each fugitive emission inspection.

Permit Conditions 2.4 and 2.5 require Amcor to take corrective action as expeditiously as practicable. In general, the DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

7.2 Control of Odors – Permit Condition 2.6

Requirement

Permit Condition 2.6 and IDAPA 58.01.01.776 both state that: "No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution." This condition is currently considered federally enforceable until such time as it is removed from the SIP, at which time it will be a state-only enforceable requirement.

Compliance Demonstration

Permit Condition 2.7 requires Amcor to maintain records of all odor complaints received. If the complaint has merit, Amcor is required to take appropriate corrective action as expeditiously as

practicable. The records are required to contain the date that each complaint was received and a description of the complaint, Amcor's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 2.7 requires Amcor to take corrective action as expeditiously as practicable. In general, the DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

7.3 Visible Emissions – Permit Condition 2.8

Requirement

IDAPA 58.01.01.625 and Permit Condition 2.8 state that "(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than twenty percent (20%) opacity as determined . . ." by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO_X, and/or chlorine gas are the only reason(s) for the failure of the emission to comply with the requirements of this rule.

Compliance Demonstration

To ensure reasonable compliance with the visible emissions rule, Permit Condition 2.9 requires that Amcor conduct quarterly visible emissions inspections of the facility. Amcor is required to inspect potential sources of visible emissions, during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission covered by this section, Amcor must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any sixty-minute period, Amcor must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. Amcor is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of Amcor's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

It should be noted that if a specific emission unit has a specific compliance demonstration method for visible emissions that differs from Permit Condition 2.9, then the specific compliance demonstration method overrides the requirement of Permit condition 2.9. Permit Condition 2.9 is intended for small sources that would generally not have any visible emissions.

Permit Condition 2.9 requires Amcor to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

7.4 Excess Emissions – Permit Condition 2.10

Permit Condition 2.10 requires Amcor to comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upsets, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. It

should, however, be noted that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if Amcor anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states "*. . . The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*" Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since Amcor has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05, and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

7.5 Open Burning – Permit Condition 2.11

All open burning shall be done in accordance with IDAPA 58.01.01.600-616.

7.6 Renovation/Demolition – Permit Condition 2.12

Amcor shall comply with all applicable portions of 40 CFR 61, Subpart M when conducting any renovation or demolition activities at the facility.

7.7 Air Pollution Emergency – Permit Condition 2.13

Permit Condition 2.13 requires Amcor to comply with the Air Pollution Emergency Rules (IDAPA 58.01.01.560-562).

7.8 Test Methods – Permit Condition 2.14

If the permit requires any testing, it shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. The test method(s) for each emissions unit limit is listed in the permit in accordance with EPA's comments as follows below.

Test methods and averaging times: The specific reference test method and averaging times for each emissions limit must be identified in the permit. A reference test method must be identified even if no source testing requirement is imposed by the permit.

7.9 Monitoring and Recordkeeping – Permit Condition 2.15

Amcor is required to maintain recorded data in an appropriate location for a period of at least five years in accordance with IDAPA 58.01.01.405.01. Though specific applicable requirements may have record retention times of less than five years, this requirement requires Amcor to maintain all recorded data for a minimum of five years, which will satisfy those shorter record retention times.

7.10 Reports and Certifications – Permit Condition 2.16

All periodic reports and certifications required by the permit shall be submitted within 30 days of the end of each specified reporting period to the appropriate DEQ and EPA regional office.

7.11 NSPS – 40 CFR 60

Amcor Precast manufactures concrete pipe and vaults. There are no subparts of 40 CFR 60 that apply to this facility.

7.12 NESHAPS – 40 CFR 61 and 63

Amcor Precast manufactures concrete pipe and vaults. There are no subparts of 40 CFR 61 or 63 that apply to this facility.

EMISSION UNITS

Cleaver Brooks 6.28 MMBtu/hr Natural Gas Fired Boiler

7.13 Particulate Matter Emissions – Permit Condition 3.3

Permit Condition 3.3 requires that Amcor shall not discharge to the atmosphere from any fuel-burning equipment particulate matter in excess of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for gas, as required by IDAPA 58.01.01.677.

7.14 Compliance Demonstration – Permit Conditions 3.5 and 3.6

Permit Condition 3.5 requires that the boiler combust only natural gas in the Cleaver Brooks boiler. Permit Condition 3.6 requires the permittee to record the natural gas combustion rate once per month. The following calculation demonstrates that Permit Conditions 3.5 and 3.6 are sufficient to assure compliance with the PM standard for the Cleaver Brooks boiler provided that only natural gas is combusted.

According to AP-42, Section 1.4, approximately 7.6 lb/10^6scf of PM is generated during natural gas combustion in boilers with capacity of less than 100 MMBtu/hr. Also, according to 40 CFR 60, Appendix A, Method 19, approximately 8710 dscf of flue gas at standard conditions (68° F, 29.92 in. Hg) is created per million Btu of natural gas. This data is used in the following steps to demonstrate that particulate emissions from the combustion of natural gas will always be less than the particulate matter standard of 0.015 gr/dscf.

1) Correct the flue gas volume:

For an altitude of 2,484 feet (per IDAPA 58.01.01.680), subtract 0.10 x 24.84 = 2.484 in. Hg from standard atmospheric pressure at sea level:

29.92 in. Hg – 2.484 in. Hg = 27.44 in. Hg

Using the Ideal Gas Law,

$V_2 = (P_1V_1)/P_2$

where: V_2 = the gas volume corrected for altitude,
V_1 = the known gas volume (8,710 dscf),
P_1 = the pressure of the known gas volume (29.92 in. Hg),
P_2 = the pressure of the corrected gas volume (27.44 in.Hg).

The altitude corrected volume (V_2) of the flue gas is 9,497 dscf.

For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19:

$F_2 = F_1[20.9/(20.9 - 3.0)]$

where: F_2 = the gas volume corrected to 3% oxygen,
F_1 = the altitude corrected flue gas volume (9,497 dscf) as calculated in the Gas Law Equation.

The oxygen and altitude corrected volume (F_2) of the flue gas is 11,089 dscf/10^6 Btu of natural gas.

2) Determine the volume of flue gas created by the combustion of one million cubic feet of natural gas:

10^6 ft^3 x 1,020 Btu/ ft^3 x 11,089 dscf/10^6 Btu = 11.3 x 10^6 dscf

Determine the grain loading per cubic foot of flue gas:

(7.6 lb PM)(7,000 gr/lb)(1/11.3 x 10^6 dscf) = 0.005 gr/dscf < 0.015 gr/dscf

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from natural gas combustion results in an approximated grain loading well below the standard of 0.015 gr/dscf. Therefore, as long as Amcor uses only natural gas as fuel in the natural gas-fired boilers, compliance with the particulate matter standard for fuel-burning equipment will be attained. Monitoring the annual natural gas usage in the boiler will be sufficient to ensure compliance with the grain loading standard.

7.15 Opacity Limits – Permit Condition 3.4

Emissions from the Cleaver Brooks boiler stack, or any other stack, vent, or functionally equivalent opening associated with the Cleaver Brooks boiler, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625, *Rules for the Control of Air Pollution in Idaho*. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

7.16 Compliance Demonstration – Permit Condition 2.9

The compliance demonstration requirements are contained in Permit Condition 2.9.

Cement and Fly Ash Silos

7.17 Emissions Limits – Permit Condition 4.3

Particulate emissions are created during pneumatic loading of the cement and fly ash silos. These emissions are controlled by a baghouse. The emission limits were calculated using the emission factors found in AP-42 dated October 2001, Section 11.12, Concrete Batching, Table 11.12-2. The maximum designed concrete production rate of the concrete batching equipment is 58 yds^3 per hour. Using the "recipe" Amcor uses to make concrete, the maximum amount of concrete that can be produced at this facility as constructed, is 1,392 yds^3 per day, and 508,080 yds^3 per 12 consecutive month period. Based on these production rates, the controlled PM_{10} emission rate is 0.12 lb/day and 0.023 T/yr for cement loading, and 0.34 lb/day and 0.06 T/yr for fly ash loading.

To determine compliance with IDAPA 58.01.01.701, the silo loading hourly emission rate must be compared with the process weight rate of material. The maximum amount of concrete that can be produced is 58 yds^3 per hour. This requires 30,920 pounds of cement, and 5,520 pounds of fly

ash. This equals a maximum of 36,440 lb/hr of raw material. Using the equation $E = 1.10(PW)^{0.25}$, which is used when PW is greater than 9,250 lb/hr, the maximum allowable particulate matter emission rate is 15.2 lb/hr. The controlled emission rate for pneumatic silo loading of cement and fly ash is 0.02 lb/hr. By operating the baghouse as required by this permit, compliance with IDAPA 58.01.01.701 is assured; therefore, this emissions standard has not been included in the permit.

7.18 Compliance Demonstration – Permit Conditions 4.5, 4.7-4.10

The production limits contained in Operating Condition 4.5 are based on the maximum design capacity of the equipment currently in operation at the facility. The fly ash and cement silo emission rates contained in Table 4.1 of the permit were calculated using these production limits and the controlled emission factors from AP-42 Section 11.12, Concrete Batching, Table 11.12-2 dated October 2001. Operating Condition 4.7 requires the use of the baghouse when the silos are being loaded. Operating Condition 4.8 requires the installation of a pressure drop monitor to monitor baghouse operation. Operation the baghouse in accordance with the O&M manual required by Monitoring Condition 4.9, and Permit Condition 4.10 requires the daily and annual cement and fly ash usage and baghouse pressure drop to be recorded.

7.19 Opacity Limits – Permit Condition 4.4

Emissions from the Handy Trucking Co. baghouse stack, or any other stack, vent, or functionally equivalent opening associated with the baghouse, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625, *Rules for the Control of Air Pollution in Idaho*. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

7.20 Compliance Demonstration – Permit Condition 2.9

The compliance demonstration requirements are contained in Permit Condition 2.9.

Emissions Limits Summary

Table 7.1 SUMMARY OF EMISSIONS LIMITS

Amcor Precast, Nampa, Idaho Emission Limits Summary[a] – Hourly (lb/hr), and Annual[b] (T/yr)										
Source Description	PM_{10}[c]		NO_x[d]		CO[e]		VOC[f]		SO_2[g]	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Cement Silo	0.12	0.023								
Fly Ash Silo	0.34	0.06								

[a] As determined by a pollutant-specific U.S. EPA reference method, a DEQ-approved alternative, or as determined by the DEQ's emissions estimation methods used in this permit analysis.

[b] As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

8. AIRS INFORMATION

Table 8.1 AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2	B					B	U
No_x	B					B	U
CO	B					B	U
PM_{10}	B					B	U
PM (Particulate)	B					B	U
VOC	B					B	U
THAP (Total HAPs)	B					B	U
			APPLICABLE SUBPART				

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

9. FEES

Fees apply to this facility in accordance with IDAPA 58.01.01.407. A fee assessment has been prepared for $2,500 as calculated in Appendix C.

10. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ provide proposed Tier II operating permit and permit to construct No. 027-00085 for public comment as required by IDAPA 58.01.01.404.02.b.

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APPENDIX A

Engineering Review Memo

Engineering Memorandum

March 17, 2003

Amcor Precast, Nampa

T2-020011

Prepared by:

Tom Anderson, Air Quality Scientist
Division of Technical Services

Acronyms, Units, and Chemical Nomenclatures

cfm	cubic feet per minute
CO	carbon monoxide
dscf	dry standard cubic feet
ft^3	cubic feet
lb/hr	pound per hour
MMBtu	Million British thermal units
NO_X	nitrogen oxides
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTE	Potential to Emit
scf	standard cubic feet
SO_x	sulfur oxides
T/yr	Tons per year
VOC's	volitile organic compounds
yds^3	cubic yards

TECHNICAL ANALYSIS

Process Description

Amcor Precast manufactures concrete pipe and vaults. Aggregate (sand and gravel), cement, and fly ash are delivered to the facility by truck. Aggregate is dumped into a bin, conveyed to the top of the mixer building, and dropped into a storage silo. The conveyors are inside the building. Cement and fly ash are pneumatically transferred from trucks to storage silos. These silos vent to a baghouse. The aggregate, cement, and fly ash are dropped into a weigh hopper, then to a mixer. The concrete is mixed, then poured into pour buckets, which are emptied into molds. The molds are moved to the curing station, then outside for storage. A 6.28 MM Btu/hr natural gas fired boiler provides heat for curing, and space heat.

Equipment Listing

The following equipment was listed in the application.

- One outdoor aggregate and sand receiving bin.
- One covered outdoor conveyor belt.
- Two indoor aggregate (5/16" and ¾") storage silos.
- One indoor sand storage silo.
- One 2,200 ft^3 indoor Type II cement storage silo.
- One 1,100 ft^3 indoor Type III cement storage silo.
- One 1,100 ft^3 indoor Class F flyash storage silo.
- One 850 cfm baghouse serving the cement and flyash silos.
- Two indoor weigh hoppers.
- One indoor 58 ft^3/hr Model HPGM Wiggert Planetary Countercurrent Concrete Mixer .
- One Cleaver Brooks Model 700-150 natural gas fired boiler.

Emission Estimates

The Amcor facility's design capacity is 58 yds^3 of concrete produced per hour. This equals a maximum of 1,392 yds^3 of concrete per day, and 508,080 yds^3 of concrete per year. Cement and fly ash are pneumatically conveyed from trucks to storage silos. The silos are vented to an 850-cfm baghouse at all times while being loaded, and only one silo can be loaded at a time. The maximum amount of cement required to produce 508,080 yds^3 of concrete per year is 135,429 tons. The maximum amount of fly ash required to produce 508,080 yds^3 of concrete per year is 24,352 tons.

PM_{10} emission factors for cement and supplement (fly ash) silo loading are found in AP-42 Section 11.12, Concrete Batching, Table 11.12-2 dated October 2001. The controlled emission factor for cement silo loading is 0.00034 lbs per ton of cement loaded. This factor multiplied by the maximum amount of cement received annually gives an annual emission rate of 46 lbs/yr (0.023 T/yr), which relates to a daily emission rate of 0.12 lbs/day of PM_{10}. The controlled emission factor for fly ash silo loading is 0.0049 lbs per ton of fly ash loaded. This factor multiplied by the maximum amount of fly ash received annually gives an annual emission rate of 119.3 lbs/yr (0.06 T/yr), which results in a daily emission rate of 0.34 lbs/day of PM_{10}. A Cleaver Brooks 6.28 MM Btu/hr natural gas fired boiler provides steam heat for curing. Emission estimates for the boiler, and for the cement and fly ash loading can be found in Appendix A of this analysis.

Aggregate and sand are dumped from trucks into storage bins located inside the production building. The material is transported by a conveyor in the building to overhead loading bins located in the mixing room. All these transfers are accomplished inside the building. Cement, fly ash, aggregate, and sand are dropped in proper proportion from the overhead bins into the weigh hopper, then into the mixer. All these transfers are accomplished inside the mixing room. Emission rates were calculated for the emissions generated by the transfers and batching operation for modeling purposes because the emissions generated from these processes

were more than an order of magnitude greater than the combined silo and baghouse emissions. Emission factors were obtained from AP-42 Section 11.12, Concrete Batching, Table 11.12-2, dated October 2001. An emission control efficiency of 70% was given to the emission estimates for the processes conducted inside the building. This control efficiency was obtained from the Pollution Technology Review Publication No. 96, entitled "Fugitive Dust Control Technology," Table 2.1.3-3.

Source Testing

No source test information was provided in the application for review nor was source test information found in the source file for Amcor Precast.

Operating Parameters

The following parameters have potential impacts on emission rates of PM and PM_{10} from the Amcor Precast concrete manufacturing process:

- Concrete processing rate.
- Pressure drop across the baghouse.
- Improperly operated baghouse.
- Visible emissions from stacks.
- Visible emissions from fugitive sources.

Cleaver Brooks Model CB700-150 6.28 MMBtu/hr Natural Gas Boiler

Emissions Factors: AP 42 Chapter 1.4 Natural Gas Combustion, July 1998, TABLE 1.4-1. 2

Small Boilers <100 MM Btu/hr Natural Gas -Fired	NOx Uncontrolled lb/MM CF	SO2 lb per MM CF	PM/PM-10 lb per MM CF	CO lb per MM CF	VOCs lb per MM CF
	100	0.6	7.6	84	5.5
Assuming a heating value of 1,020 Btu/scf, divide lb/10^6 cu ft by 1,020 to arrive at lb/MM Btu	NOx lb per MM Btu	SO2 lb per MM Btu	PM-10 lb per MM Btu	CO lb per MM Btu	VOCs lb per MM Btu
	0.0980	0.0006	0.0075	0.0824	0.0054

Operating Parameters

Heat Input Btu/hr =	6.28E+06
Fuel Heat Value Btu/cf =	1020
Fuel Burned cf/hr =	6157
Maximum Fuel Burned cf/yr =	5.39E+08
Maximum Hours of Operation =	8760

Potential to Emit

	lbs/hr	tons/yr
PM/PM-10	4.68E-02	2.05E-01
SO2	3.69E-03	1.62E-02
NOX	6.16E-01	2.70E+00
CO	5.17E-01	2.27E+00
VOCs	3.39E-02	1.48E-01

AMCOR Precast Process Emissions

Process Data	
Maximum Production Rate cu.yds/hr	58
Actual Production Rate cu.yds/hr.	0.7
Maximum Operating Hours/yr	8760
Actual Operating Hours/yr	4160

Material Usage

Raw Material	Mix Proportion	Density lb/cu yd	Volume Factor	lb raw material per cu. yd concrete	Maximum tons/hr	Actual tons/hr
Aggregate	0.46	2835	1.5	1956.15	56.73	0.68
Sand	0.29	2700	1.5	1174.50	34.06	0.41
Cement	0.14	2538	1.5	532.98	15.46	0.19
Fly Ash	0.03	2133	1.5	95.99	2.78	0.03
Water	0.08	1684.8	1.5	202.18	5.86	0.07
Total	1			3961.79	114.9	1.4

Volume Factor allows for the fact that due to settling, 1 cubic yard of raw material yields approximately 2/3 cubic yards of concrete.

Hourly and Annual Potential PM and PM10 Emissions Uncontrolled

Source	Emission Factor PM lb/ton	Emission Factor PM10 lb/ton	PM Emissions lb/hr	PM Emissions tons/yr	PM10 Emissions lb/hr	PM10 Emissions tons/yr
Aggregate Transfer (2)	0.0069	0.0033	0.78	3.43	0.37	1.64
Sand Transfer (2)	0.0021	0.00099	0.14	0.63	0.07	0.30
Pneumatic Cement Silo Loading	0.72	0.46	11.13	48.74	7.11	31.14
Pneumatic Fly Ash Silo Loading	3.14	1.1	8.74	38.28	3.06	13.41
Weigh Hopper Loading	0.0051	0.0024	0.56	2.44	0.26	1.15
Mixer Loading	0.22	0.078	23.99	105.06	8.50	37.25
Total			45.34	198.58	19.38	84.88

Emission Factors from AP-42 dated October 2001, Section 11.12, Concrete Batching, Table 11.12-2

Hourly and Annual Potential PM and PM10 Emissions Controlled

Source	Emission Factor PM lb/ton	Emission Factor PM10 lb/ton	PM Emissions lb/hr	PM Emissions tons/yr	PM10 Emissions lb/hr	PM10 Emissions tons/yr
Aggregate Transfer (2)	0.0069	0.0033	0.78	3.43	0.374	1.64
Sand Transfer (2)	0.0021	0.00099	0.14	0.63	0.067	0.30
Pneumatic Cement Silo Loading	0.00099	0.00034	0.02	0.07	0.005	0.02
Pneumatic Fly Ash Silo Loading	0.0089	0.0049	0.02	0.11	0.014	0.06
Weigh Hopper Loading	0.0051	0.0024	0.56	2.44	0.262	1.15
Mixer Loading	0.011	0.0038	1.20	5.25	0.414	1.81
Total			2.72	11.92	1.14	4.98

Emission Factors from AP-42 dated October 2001, Section 11.12, Concrete Batching, Table 11.12-2

All hourly emission rates are based on a maximum of 58 cubic yards per hour of concrete produced.
All annual emission rates are based on a maximum of 508,080 cubic yards of concrete produced annually.
Aggregate and sand transfer, weigh hopper and mixer loading operations are considered fugitive dust emissions, and are not used to determine potential to emit.

APPENDIX B

Modeling Review Memo

MEMORANDUM

TO: Thomas Anderson, Air Permit Writer, State Office of Technical Services
Mary Anderson, Air Modeling Coordinator, Air Program Division

FROM: Kevin Schilling, Air Quality Scientist, State Office of Technical Services

SUBJECT: Modeling Review for the AMCOR Precast Permit to Construct / Tier II Operating Permit Application; Nampa, Idaho

DATE: January 3, 2003

1.0 SUMMARY:

AMCOR Precast (AMCOR) submitted an application for a facility-wide Permit to Construct (PTC) / Tier II Operating Permit for their facility in Nampa, Idaho. The application was received by the Idaho Department of Environmental Quality (DEQ) on April 10, 2002, and was declared incomplete on August 8, 2002. Additional information was submitted to DEQ on August 28, 2002, and the application was declared complete on September 24, 2002. Facility-wide modeling was submitted with the application to demonstrate that emissions from the facility would not cause or significantly contribute to a violation of an ambient air quality standard, as required by IDAPA 58.01.01.203.02 and 403.02.

2.0 DISCUSSION:

This section describes the regulatory modeling requirements and the methodology used for the analyses performed.

2.1 Introduction and Regulatory Requirements for Modeling

DEQ received a PTC / Tier II operating permit application from AMCOR on April 10, 2002, for their precast concrete products facility in Nampa, Idaho. The primary emissions generating activities at the facility are dry cement and fly ash material handling and operation of a natural gas-fired boiler.

Per IDAPA 58.01.01.203.02 and 403.02, neither a PTC nor a Tier II operating permit can be granted unless the applicant demonstrates to the satisfaction of DEQ that emissions from the facility "would not cause or significantly contribute to a violation of any ambient air quality standard." Atmospheric dispersion modeling was performed by the applicant's consultant, Spidell and Associates (Spidell), to fulfill these requirements.

2.2 Applicable Air Quality Impact Limits and Required Analyses

2.2.1 Area Classification

The AMCOR facility is located in Canyon County, which is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}).

2.2.2 Significant Impact and Full Impact Analyses

If estimated maximum impacts to ambient air from the emissions sources at the facility exceed the "significant contribution" levels of IDAPA 58.01.01.006.93, then DEQ modeling guidance requires a full impact analysis. A full impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions to DEQ-approved background concentration values that are appropriate for each criteria pollutant/averaging-time at the facility location. The resulting maximum pollutant concentrations in ambient air are then compared to the National Ambient Air Quality Standards (NAAQS) listed in Table 1. Table 1 also specifies the modeled value that must be used for comparison to the NAAQS.

Table 1. Applicable Regulatory Limits

Pollutant	Averaging Period	Regulatory Limit[a] ($\mu g/m^3$)[b]	Modeled Value Used[c]
Nitrogen Dioxide (NO_2)	Annual	100[d]	Maximum 1st highest[e]
Sulfur Dioxide (SO_2)	3-hour	1,300[f]	Maximum 2nd highest[e]
	24-hour	365[f]	Maximum 2nd highest[e]
	Annual	80[d]	Maximum 1st highest[e]
Carbon Monoxide (CO)	1-hour	40,000[f]	Maximum 2nd highest[e]
	8-hour	10,000[f]	Maximum 2nd highest[e]
PM_{10}[g]	24-hour	150[f]	Maximum 6th highest[e]
	Annual	50[d]	Maximum 1st highest[e]
Lead (Pb)	Quarterly	1.5[d]	Maximum 1st highest[e]

a. IDAPA 58.01.01.577
b. Micrograms per cubic meter
c. When using five years of meteorological data
d. Not to be exceeded
e. At any modeled receptor
f. Not to be exceeded more than once per year
g. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

2.2.3 Toxic Air Pollutant Impact Analysis

An ambient air assessment of Toxic Air Pollutant (TAP) impacts was performed for the facility to demonstrate compliance with IDAPA 58.01.01.210 and IDAPA 58.01.01.161. Facility-wide emissions of all TAPs were below screening emission levels (ELs) except for arsenic, cadmium, and nickel, which may be present in fly ash and cement.

2.3 Background Concentrations

Ambient air monitoring data applicable to the area surrounding AMCOR are not available. Although the area is primarily rural/agricultural, ambient air is impacted by emissions from the Amalgamated Sugar Company (TASCO) and other nearby industries. Applicable background concentrations in absence of the TASCO facility were developed for issuance of the TASCO Tier II Operating Permit. These values were based on monitoring results collected in Nampa, Meridian, and monitoring data from similar type locations throughout Idaho. Table 2 lists these background values. DEQ has further revised background concentrations for CO, SO_2, and NO_2 for areas in Idaho since the issuance of the TASCO permit. Potentially applicable revised background concentrations for the area surrounding AMCOR are all less than those listed in Table 2.

Dispersion modeling of emissions from the TASCO facility, as configured after implementation of modifications required by the permit over the next five years, indicated that the maximum 6th highest 24-hour averaged PM_{10} impact concentration in the area surrounding AMCOR is 35 $\mu g/m^3$. A background 24-hour PM_{10} concentration of 125 $\mu g/m^3$ was calculated by adding the TASCO impact to a regional background value of 90 $\mu g/m^3$. Figure 1 shows concentration contours of the 6th highest 24-hour PM_{10} impacts from TASCO future permitted allowable emissions.

This method of calculating a background concentration is very conservative and will likely result in an over prediction because of the following:

- These concentrations are modeled concentrations resulting from the use of maximum allowable emission rates.
- The time periods during which modeled maximum concentrations occur for TASCO are likely to be different than the time periods during which maximum concentrations occur for AMCOR.

Table 2. Background Concentrations

Pollutant	Averaging Period	Background Concentration Without TASCO Impact ($\mu g/m^3$)[a]	TASCO Modeled Impact in AMCOR Area ($\mu g/m^3$)	Background Concentration Including TASCO Impact ($\mu g/m^3$)
PM_{10}	24-hour	90	38	128
	Annual	28.5	9	37.5
CO	1-hour	12,700	7,000	19,700
	8-hour	7,100	3,500	10,600
SO_2	3-hour	374	300	674
	24-hour	120	120	240
	Annual	18.3	14	32.3
NO_2	Annual	40	17.3	57.3

a. Micrograms per cubic meter
b. Equal to the NAAQS

2.4 Modeling Impact Assessment

Table 3 provides a summary of the modeling parameters used for the DEQ analyses.

Table 3. Modeling Parameters

Parameter	Description/Values	Documentation/Additional Description
Model	ISCST3	Version 02035
Meteorological Data	Boise, Idaho (surface and upper air)	1987-1991
Model Options	Regulatory Default	
Land Use	Rural	Based on population density and actual land use.
Terrain	flat	
Building Downwash	Used building profile input program (BPIP)	Building dimensions obtained from modeling files submitted.
Receptor Grids (See Figure 1)	Grid 1	25 meter spacing from site boundary to 100 meters.
	Grid 2	50 meter spacing out to about 500 meters.
	Grid 3	100 meter spacing out to about 1,000 meters.

Facility Location (UTM)	E	534 kilometers
	N	4,829 kilometers

2.4.1 Modeling Protocol

A modeling protocol was not submitted to DEQ prior to the application.

2.4.2 Model Selection

The ambient air impact analysis was performed by Spidell using the model ISCST3 - Version 00101. DEQ conducted verification modeling using ISCST3 – Version 02035.

2.4.3 Meteorological Data

Surface and upper air meteorological data from Boise, Idaho, were used in the modeling analyses. These data were collected from January 1987 through December 1991. DEQ determined that these data were the most representative data available for the area.

2.4.4 Terrain Effects and Facility Layout

The modeling analyses submitted by Spidell did not consider elevated terrain. DEQ reviewed 7.5-minute USGS maps to confirm the absence of significant terrain features in the areas where emissions from AMCOR could have a measurable impact. DEQ also verified proper identification of the facility boundary and buildings on the site by comparing the modeling input to a facility plot plan submitted and aerial photographs of the area.

2.4.5 Building Downwash Effects

Plume downwash effects caused by structures present at the facility were accounted for in the modeling analyses. The Building Profile Input Program for ISCST3 (BPIP) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters.

2.4.6 Receptors

Spidell originally used a receptor grid of 25-meter spacing along the property boundary, a fine grid of 50-meter spacing out to 500 meters, and a coarse grid of 100-meter spacing out to 1,000 meters from the property boundary. DEQ refined this grid during model verification to extend the 25-meter grid out to 100 meters from the property boundary. Figure 2 shows the modeling input locations and dimensions for buildings, emissions sources, and receptors.

2.4.7 Emissions Rates

Emissions from the facility occur from two sources: 1) a natural gas-fired boiler; 2) emissions from the handling of cement and fly ash. Emissions from the loading of cement and fly ash are controlled by fabric filters.

Fugitive emissions also occur from material handling and mixing operations conducted indoors. These emissions were not included in the original modeling submitted by Spidell. DEQ included these sources in verification modeling because emissions quantities were over an order of magnitude larger than the point sources at the facility. Emissions rates used for those fugitive sources were based on "controlled" emissions factors to account for enclosing the sources. An additional 70% control efficiency was used to account for the building enclosure.

Table 4 provides emissions quantities for criteria pollutants. Table 5 provides emissions rates for those TAPs having potential emissions rates greater than the ELs. Emissions rates of all non-carcinogenic TAPs were below ELs.

2.4.8 Emissions Release Parameters

Table 6 provides emissions release parameters.

Table 4. Criteria Pollutant Emissions Rates Used for Modeling

Source (Id Code)	Maximum Hourly Emissions Rate Increase[a] (lb/hr)[b]				Hourly Rate Used for Annual Modeling[c] (lb/hr)			
Pollutant	PM_{10}[d]	SO_2[e]	NO_x[f]	CO[g]	PM_{10}	SO_2	NO_x	CO
Boiler (BLRSTK)	0.0468	0.00369	NM[h]	0.517	0.0468	0.00369	0.616	NM[h]
Baghouse (BGHSE)	0.0136	0.0	NM[h]	0.0	0.0136	0.0	0.0	NM[h]
Fugitives (FUGBLDG)	0.335	0.0	NM[h]	0.0	0.335	0.0	0.0	NM[h]

a. Emissions rate used for 24-hour, 8-hr, 3-hr, and 1-hr averaging periods
b. Pounds per hour
c. Emissions rate used for annual averaging period
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
e. Sulfur dioxide
f. Oxides of nitrogen
g. Carbon monoxide
h. Not modeled because there is no standard associated with the specified averaging period

Table 5. Carcinogenic TAP Emissions Rates Used for Modeling

Source (Id Code)	Maximum Emissions Rate Increase Used for Modeling (lb/hr)[a]		
Pollutant	Arsenic	Cadmium	Nickel
Boiler (BLRSTK)	1.23E-6	6.77E-6	1.29E-5
Baghouse (BGHSE)	2.78E-6	5.51E-8	6.35E-6
Fugitives (FUGBLDG)	2.00E-5	1.90E-7	8.84E-5

a. Pounds per hour

Table 6. Emissions and Stack Parameters

Source / Location	Source Type	Stack Height (m)[a]	Stack Diameter (m)	Stack Gas Temp. (K)[b]	Stack Gas Flow Velocity (m/sec)[c]
Boiler (BLRSTK)	Point	6.1	0.46	422	34
Baghouse (BGHSE)	Point	3.7	0.10	294	50
		Release Height (m)	σ_{y0}[d]	σ_{z0}[d]	
Fugitives (FUGBLDG)	Volume	7.3	5.6	6.8	Not Applicable

a. Meters
b. Kelvin
c. Meters per second
d. Initial horizontal and vertical dispersion coefficients

2.4.9. Modeling Analyses Methodology

A significant impact analysis was initially performed to determine if emissions from the facility would "significantly contribute" to pollutant concentrations in ambient air, as defined by IDAPA 58.01.01.006.93. DEQ modeling guidance requires that a full impact analysis be performed for those pollutants emitted from the facility that were estimated to have an impact to ambient air exceeding

"significant contribution" levels. The full impact analysis involves modeling impacts from the facility's emissions and adding those impacts to background concentrations.

3.0 MODELING RESULTS:

This section describes dispersion modeling results from the significant impact analysis, the full impact analysis, and the TAP impact analysis.

3.1 Significant Impact Analysis Results

Modeled ambient air impact results from the significant impact analysis are provided in Table 7 for facility-wide emissions. The values reported in this memorandum were obtained from DEQ verification modeling using ISCST3. Because the potential ambient impact of the facility-wide emissions are greater than "significant contribution" levels for 24-hour and annual PM_{10} and annual NO_2, a full impact analysis was performed.

Table 7. Significant Impact Analysis for Criteria Pollutants

Pollutant	Averaging Period	Ambient Impact ($\mu g/m^3$)[a]	Significant Contribution[b] ($\mu g/m^3$)	Full Impact Analysis Required (Y or N)
PM_{10}[c]	24-hour	18.1	5.0	Y
	Annual	3.95	1.0	Y
Carbon Monoxide (CO)	1-hour	219	500	N
	8-hour	118	2,000	N
Sulfur dioxide (SO_2)	3-hour	1.3	25	N
	24-hour	0.37	5	N
	Annual	0.057	1.0	N
Nitrogen dioxide (NO_2)	Annual	9.45	1.0	Y

a. Concentration in micrograms per cubic meter
b. Significant contribution level as per IDAPA 58.01.01.006.93
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

Figure 3 shows 6th highest 24-hour averaged modeled PM_{10} concentration impacts. Concentrations exceeding the significant impact level only occur in a relatively small area immediately northwest of the facility.

3.2 Full Impact Analysis

A full impact analysis involves modeling facility-wide emissions and adding an appropriate background concentration value to those results. Results of the full impact analysis are presented in Table 8.

Table 8. Full Impact Analysis for Criteria Pollutants (Facility-wide Emissions).

Pollutant	Averaging Period	Ambient Impact. ($\mu g/m^3$)[a]	Background Conc.[b] ($\mu g/m^3$)	Total Ambient Conc. ($\mu g/m^3$)	Regulatory Limit[c] ($\mu g/m^3$)	Percent of NAAQS
PM_{10}[d]	24-hour	16.3[e]	128	144.3	150	96
	Annual	3.95[f]	37.5	41.5	50	83
Nitrogen dioxide (NO_2)	Annual	9.45[f]	57.3	66.8	100	67

a. Concentration in micrograms per cubic meter
b. Including contributions from TASCO emissions.
c. IDAPA 58.01.01.577
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
e. Maximum 6th highest modeled value at any receptor
f. Maximum 1st highest modeled value at any receptor

3.3 Toxic Air Pollutant Analysis Results

Table 9 provides modeling results for those TAPs having potential emissions greater than the ELs. All modeled concentrations were less than applicable AACs and AACCs.

Table 9. TAP Modeling Results

Pollutant	Averaging Period	Ambient Impact ($\mu g/m^3$)[a]	AAC[b] or AACC[c] ($\mu g/m^3$)	Percent of AAC or AACC
Non-Carcinogens				
none				
Carcinogens				
Arsenic (As) Compounds	Annual	2E-5	2.3E-4	9
Cadmium (Cd) Compounds	Annual	<1.0E-4	5.6E-4	<18
Nickel (Ni) Compounds	Annual	4.3E-4	4.2E-3	10

a. Concentration in micrograms per cubic meter
b. Acceptable Ambient Concentration for non-carcinogens
c. Acceptable Ambient Concentrations for Carcinogens

4.0 CONCLUSION

All modeling results are below applicable NAAQS and AACs/AACCs. Although results from the full impact analysis are near NAAQS, impacts from the facility by itself (without including background concentrations, which are largely composed of impacts from TASCO) are less than half the value of applicable standards.

Electronic copies of the modeling analysis are saved on disk. Table 10 provides a summary of the files used in the modeling analysis. The permitting engineer has reviewed this modeling memo to ensure consistency with the PTC/Tier II operating permit and technical memorandum.

Table 10. Dispersion Modeling Files

Type of File	**Description**	**File Name**
Met data	Surface and upper air from Boise, Idaho NWS data: January 1987 – December 1991	BoiseXX.MET XX = year of met data
BEEST input files	24-hour PM_{10}, SO_2, CO	AMCOR24.BST
	Annual PM_{10}, NO_2, SO_2, Carcinogenic TAPs	AMCORAnnXX.BST XX = year of met data

Each BST file has the following type of file associated with it:	
Input file for BPIP program	.PIP
BPIP output file	.TAB
Concise BPIP output file	.SUM
BEE-Line file containing direction specific building dimensions	.SO
ISCST3 input file for each pollutant	.DTA
ISCST3 output list file for each pollutant	.LST
User summary output file for each pollutant	.USF
Master graphics output file for each pollutant	.GRF
Some modeling files have the following types of graphics files associated with them:	
Surfer data file	.DAT
Surfer boundary file	.BLN
Surfer post file containing source locations	.TXT
Surfer plot file	.SRF

APPENDIX C

Fee Calculations

Tier II Fee Calculation

Instructions:
Insert the following information and answer the following questions either Y or N. Insert the permitted emissions in tons per year into the table. TAPS only apply when the Tier II is being used for New Source Review.

Company: **Amcor Precast**
Address: **16419 Ten Lane**
City: **Nampa**
State: **Idaho**
Zip Code: **83687**
Facility Contact: **Mike Burke**
Title: **General Manager**
AIRS No.: **027-00085**

N	Did this permit meet the requirements of IDAPA 58.01.01.407.02 for a fee exemption Y/N?
N	Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
N	Is this a syntheric minor permit? Y/N

Emission Inventory	Permitted Emissions
Pollutant	(tons/yr)
NO_x	2.7
PM10	0.4
PM	0.0
SO_2	0.0
CO	2.3
VOC	0.2
HAPS/TAPS	
Total:	5.6
Fee Due	$ 2,500.00

Comments: